SAFETY REGULATIONS

ALL EXCAVATION AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MARYLAND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (MOSHA) STANDARDS AS SET FORTH IN THE LATEST VERSION OF THE CODE OF MARYLAND REGULATIONS

THERE WILL BE NO CHANGES IN SPECIFICATION, DIMENSIONS, OR MATERIALS UNLESS APPROVED BY THE ENGINEER RESPONSIBLE FOR THIS DRAWING.

THE DRAWINGS ARE PREPARED COOPERATIVELY BY THE NATURAL RESOURCE CONSERVATION SERVICE FOR THE NAMED LANDOWNER. CONSTRUCTION FOUND NOT IN ACCORDANCE WITH THESE DRAWINGS AND SPECIFICATIONS SHALL VIOLATE THE COOPERATIVE AGREEMENT AND ALL DRAWINGS, SPECIFICATIONS, AND QUANTITIES ESTIMATE SHALL IMMEDIATELY BE RETURNED TO THE LOCAL NRCS OFFICE.

LANDOWNER

313 - WASTE STORAGE STRUCTURE

561 - HEAVY USE AREA

635 - WASTEWATER TREATMENT STRIP

382 - FENCING

(DISTRICT SOIL CONSERVATION DISTRICT)

AS-BUILT STATEMENT

THE CONSERVATION PRACTICE(S) MEETS OR EXCEEDS NRCS STANDARDS AND SPECIFICATIONS

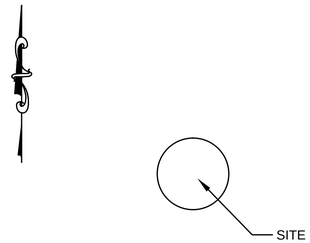
INSPECTED BY _____ SIGNATURE _____ DATE

CONSTRUCTION APPROVAL _____ SIGNATURE _____ DATE

VERIFIED DISTRICT CONSERVATIONIST _____ SIGNATURE _____ DATE

GENERAL NOTES:

- PLEASE CONTACT THE DISTRICT SOIL CONSERVATION DISTRICT AT LEAST 3 DAYS PRIOR TO CONSTRUCTION TO ARRANGE A PRE-CONSTRUCTION MEETING @ PHONE #
- A CONSERVATION TECHNICIAN SHALL VERIFY CUT/GRADE STAKES AT THE CONTRACTORS REQUEST



CRITICAL INSPECTION ITEMS
(Roofed Waste Storage Facility and/or Covered Feeding Area)

1. The landowner will arrange for a pre-construction meeting between the contractor, NRCS and landowner to review the plans, standards and specifications prior to the start of construction.
2. There will be no changes in specifications, dimensions, or materials unless approved by the engineer responsible for this drawing.
3. The drawings are prepared cooperatively by the Natural Resources Conservation Service for named owner/operator. Construction found not in accordance with these drawings and specifications shall violate the cooperative agreement and all drawings, specifications, and Quantities Estimate shall immediately be returned to the local NRCS office.
4. The following is a list of items that must be ins payment may be forfeited if the Technician-in-

- Preconstruction Meeting
- Verify layouts:
- Verify all subgrades:
- Verify all subgrade materials CR-6 etc
- Verify reinforcing steel grade, size an
  - Footings:
  - Walls and/or curbs:
  - Floor:
- Inspect all concrete in accordance wit
  - Footings:
  - Walls and/or curbs:
  - Full dimension wall ties:
  - Floor:
- Proper curing of concrete:
- Patching wall ties, holes and honeyco
- Roof inspection in accordance with pl
  - Posts size, material and installation:
    - Preservative treatment or use coc
    - Anchors or embedment installatio
  - Header size, material and installation:
    - Hardware size, spacing, and type
  - Knee brace (post to truss) size and m
    - Hardware size, spacing, and type
  - Y brace (post to header) size and mat
    - Hardware size, spacing, and type
  - Hurricane straps:
  - Received/reviewed truss design shee
  - Purlins material and installation:
    - Hardware size, spacing, and type
  - Roofing, material and installation:
    - Hardware size, spacing, and type
- Backfill placement and compaction
- All disturbed areas seeded and mulch

Other items shown on the plans: Date: _____ Initials: _____

CRITICAL INSPECTION ITEMS
(Unroofed Concrete Waste Storage Facility and/or Feeding Area)

1. The landowner will arrange for a pre-construction meeting between the contractor, NRCS and landowner to review the plans, standards and specifications prior to the start of construction.
2. There will be no changes in specifications, dimensions, or materials unless approved by the engineer responsible for this drawing.
3. The drawings are prepared cooperatively by the Natural Resources Conservation Service for named owner/operator. Construction found not in accordance with these drawings and specifications shall violate the cooperative agreement and all drawings, specifications, and Quantities Estimate shall immediately be returned to the local NRCS office.
4. The following is a list of items that must be inspected by the Technician-in-Charge. If cost share is involved, payment may be forfeited if the Technician-in-Charge does not inspect all of the below:

- Preconstruction Meeting Date: _____ Initials: _____
- Verify layouts: Date: _____ Initials: _____
- Verify all subgrades: Date: _____ Initials: _____
- Verify all subgrade materials CR-6 etc: Date: _____ Initials: _____
- Verify reinforcing steel grade, size and placement:
  - Footings: Date: _____ Initials: _____
  - Walls and/or curbs: Date: _____ Initials: _____
  - Floor: Date: _____ Initials: _____
- Inspect all concrete in accordance with specifications:
  - Footings: Date: _____ Initials: _____
  - Walls and/or curbs: Date: _____ Initials: _____
  - Full dimension wall ties: Date: _____ Initials: _____
  - Floor: Date: _____ Initials: _____
- Proper curing of concrete: Date: _____ Initials: _____
- Patching wall ties, holes and honeycombing: Date: _____ Initials: _____
- Subsurface Drainage (if applicable)
  - Trench grade: Date: _____ Initials: _____
  - Drain tubing material: Date: _____ Initials: _____
  - Stone envelope: Date: _____ Initials: _____
  - Backfill placement: Date: _____ Initials: _____
  - Proper outlet and rodent guard: Date: _____ Initials: _____
- Backfill placement and compaction Date: _____ Initials: _____
- Safety fence and pushoff guard: Date: _____ Initials: _____
- All disturbed areas seeded and mulched: Date: _____ Initials: _____
- Other items shown on the plans: Date: _____ Initials: _____

VICINITY MAP

N.T.S.

SHEET	TITLE
2	PLAN VIEW/PROFILES
3	DESIGN CUT SHEETS
4	WASTEWATER TREATMENT/SEEDING DETAILS
5	FENCING

811 Know what's below. Call before you dig.

"The Soil Conservation District makes no representation as to the existence or Non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities"

DANGER
MANURE STORAGE USE CAUTION

SIGN REQUIRED FOR BEEF, POULTRY AND HORSE DRY STACKING STRUCTURES. PLACE ONE SIGN AT EACH ENTRANCE/ACCESS POINT.

MATERIALS LIST

OWNER/CONTRACTOR STATEMENT

I CERTIFY THAT THIS DESIGN HAS BEEN EXPLAINED TO ME BY A REPRESENTATIVE OF THE _____DISTRICT_____ SOIL CONSERVATION DISTRICT, AND I UNDERSTAND THE CONTENTS, ALL CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND SPECIFICATIONS, I FURTHER UNDERSTAND THAT ALL CONSTRUCTION WILL BE UNDER THE INSPECTION OF THIS OFFICE.

_____
OWNER'S SIGNATURE DATE

_____
CONTRACTOR'S SIGNATURE DATE

CONSTRUCTION NOTIFICATION

The Contractor/Owner is to notify the _____DISTRICT_____ SOIL CONSERVATION DISTRICT at least 72 hours prior to construction to facilitate any scheduling, layout, or preliminary mobilization necessary to ensure proper construction inspection to enable appropriate certification of the project.

It is the Landowner's responsibility to obtain all County, State, and Federal permits that may be needed, and to maintain this structure and related regulations.

Designed MM/YY
Drawn
Checked

LANDOWNER
313 WASTE STORAGE FACILITY
TRACT
City, Maryland

Approved Date
Title Job Class

Maryland Department of Agriculture
DISTRICT Soil Conservation District

United States Department of Agriculture
USDA
Natural Resources Conservation Service

REVISIONS

Date	Description	Approved

File No.
*.DWG

TIMBER CONSTRUCTION NOTES

1/2012

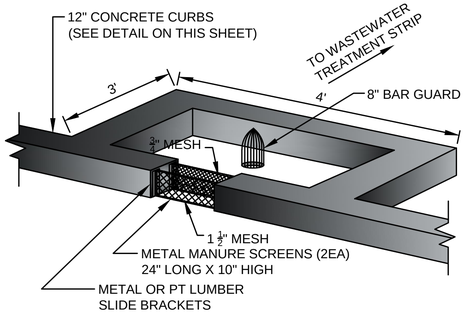
1. All lumber below the fascia board level shall be preservative pressure treated Southern Yellow Pine, No.2 KD, 19% m.c. or better. All other lumber may be either Southern Yellow Pine or Spruce-Pine-Fir No. 2 or better unless specified otherwise. Protection such as clear preservative, paint, or pressure treatment shall be required for the plywood. Timber shall be pressure treated in accordance with the chart below.

Use Codes for Treated Building Materials	
Use Code for Ground or Manure Contact Lumber	UC4B
Use Code for all other Treated Lumber	UC4A

2. All metal hardware and nails shall be stainless steel or hot-dip galvanized (HDG). Stainless steel shall be grade types 304 or 316. Hot dipped galvanized fasteners shall conform to ASTM A 153 and hot-dip galvanized connectors shall conform to ASTM Standard A 653 (Class G-185).

   All fasteners, connectors, and any other metal contacting ACZA, ACQ or CA treated wood shall be stainless steel.

   There may be additional products (other than stainless steel and hot-dip galvanized) which are suitable for use in treated wood except for the types listed in the note above. These screws and connectors have proprietary anti-corrosion technologies and are acceptable for treated wood exposed to moisture when used according to the hardware manufacturer's recommendations and must be clearly marked "for use with" the type of treated wood being used.
3. All structural nail connections must be nailed with twisted or ring shank nails.
4. Power driven nails (PDN) shall be 0.131 Diameter or larger, deformed shank, and helical (spiral) or annular (ring) type. The number and length of 0.131 diameter power driven nails is specified in parenthesis next to each connection. Pressure shall be applied to wood members to insure tight joints when using power driven nails. The head of the nail may not be countersunk more then 1/16" into the wood.



MANURE SCREEN AND COLLECTION DETAIL

N.T.S.

OPERATION AND MAINTENANCE SCHEDULE FOR HEAVY USE AREA PROTECTION

10 year maintenance life

1. Inspect Heavy Use Area twice a year, minimum.
2. Scrape surface as needed to remove excess manure and or sediment.
3. Repair any deteriorating areas with original surface material used, by replacement of lost gravel, repaving holes, and regrading paving materials.
4. Inspect inlets and outlets of pipes and culverts and remove any obstructions present.
5. Fences must be inspected and maintained in order to control livestock to certain areas such as filter borders, diversions, or waterways

If filter borders are a component of the Heavy Use Area the following operation and maintenance plan needs to be followed:

6. Mow, fertilize and lime to maintain flow capacity, grass height, plant density and to promote vigorous growth.
7. Inspect at least once a year and after major storms for areas that are eroding and need reseeding. Repair problems immediately. Fill in and reseed, following original seeding specifications.
8. Maintain the width of filter borders when tilling and planting surrounding fields.
9. Do not use filter borders as a road. Vehicle tire tracks can become gullies.

If filter borders are to be flash grazed the following operation and maintenance plan needs to be followed:

10. Filter borders shall not be grazed during the first growing season.
11. Filter borders shall be grazed to maintain a grass height of 4-6 inches.
12. At least one month prior to the first killing frost animals shall be removed to maintain a grass height of 4-6 inches through out the winter. Filters may be flash grazed at beginning of next growing season.
13. Repairs should be made as soon as possible. Repairs should be made to return the structure to the same condition as it was designed.

PLAN VIEW

Designed MM/YY
Drawn
Checked

LANDOWNER
313 WASTE STORAGE FACILITY
TRACT
City, Maryland

Approved Date
Title Job Class

Maryland Department of Agriculture
DISTRICT Soil Conservation District

United States Department of Agriculture
Natural Resources Conservation Service

REVISIONS

Date	Description	Approved

File No.
*.DWG

Sheet 2 of 5

FACT SHEET #4 **AGRICULTURAL WASTE SYSTEM SAFETY SIGNS**

It Is the RESPONSIBILITY of the CONTRACTOR/INSTALLER to provide safety signs as shown below or equal. One shall be located at each entrance/access point where access can result in a fatality due to manure gases and/or drowning. Several signs are specified for larger facilities. Three types of signs are required to cover different hazards. Bilingual operations should consider using both types.

Place one sign at each entrance/access point to a below-ground manure storage pit, covered ground-level storage, a covered above-ground storage, and all manure hoppers and reception pits.

Example locations: Collection hoppers, agitation point for slatted pits, septic tanks that hold milking center and manure wastes and any other confined space where waste is collected.

Place one sign at each entrance/access point of a manure storage pond, in-ground uncovered storage structure OR on each accessible side of a storage pond.

Example Locations: Open storage tanks, earthen storage ponds, and HDPE lined ponds.

Place one sign at each entrance/access and each agitation point of an uncovered manure storage pond, an uncovered above-ground manure storage structure, an uncovered below-ground manure storage structure, and all reception pits. Also place one where visitors or children might congregate.

Example locations: All agitation/pump out locations of above and below ground storages. Any areas where visitors or children might tend to congregate such as at the end of the access road near the manure storage.

IMPORTANT! Safety signs are designed to serve as a reminder of a hazard and consequences; the signs do not replace or substitute for original product warnings or labels, equipment safety literature, or specific safety training associated with manure systems and handling equipment. Owner/operators shall consult their site specific engineering designs, safety plans, and operation/maintenance plans for additional safety requirements. If no information is found, or more is needed, additional information can also be received from equipment manufacturers and distributors, county extension offices, private consultants, and NRCS offices.

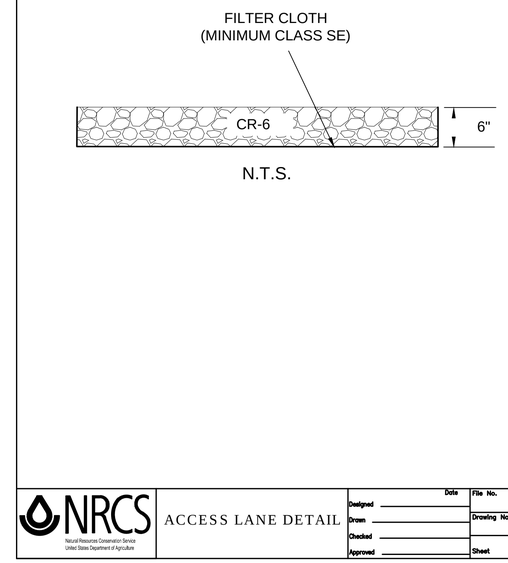
Sources:

- U.S. Municipal Supply, Inc. 1-800-222-1980
- Local Extension Service
- Self-Made Equal
- Local Conservation District
- Local Sign Making Company

USDA UNITED STATES DEPARTMENT OF AGRICULTURE — NATURAL RESOURCES CONSERVATION SERVICE MARYLAND | MANURE STORAGE WARNING SIGNS | DRAWING NO. 313-SIGNS | ISSUE DATE: 1/2015

Supplement to Fact Sheet 4- Provide this for situations where the producer or contractor does not want to purchase signs from US Municipal and wishes to use an alternate source or make their own signs. Signs should have similar wording and be made of materials that will last the life of practice. March 2014

These layouts were developed by: US Municipal, 1-800-222-1980. They represent input from USDA-NRCS for the actual wording. Alternate sign suppliers should use the same wording.



NRCS Natural Resources Conservation Service, United States Department of Agriculture — ACCESS LANE DETAIL

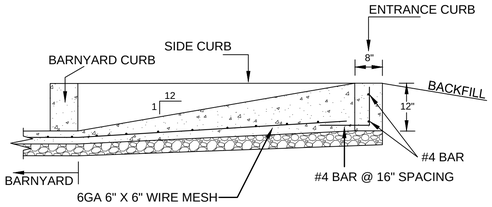
Designed	Date	File No.
Drawn		Drawing No.
Checked		
Approved		Sheet of

LANDOWNER
313 WASTE STORAGE FACILITY
TRACT
City, Maryland

Designed MM/YY
Drawn
Checked

Approved Date
Title Job Class

Maryland Department of Agriculture
DISTRICT Soil Conservation District



NOTES:
SURFACE OF RAMP MAY BE TEXTURED TO PROVIDE TRACTION
CONCRETE MINIMUM PSI = 4000

(N.T.S.)

NRCS Natural Resources Conservation Service, United States Department of Agriculture — CONCRETE BARNYARD RAMP

Designed	Date	File No.
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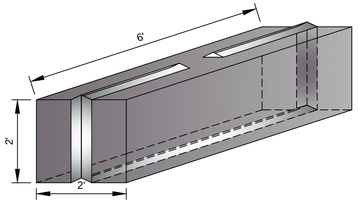
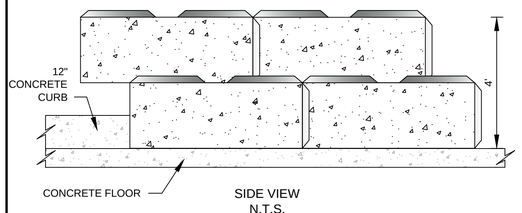
Approved		Sheet of



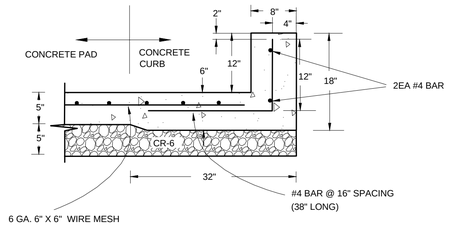
STANDARD CONCRETE BLOCK DETAIL
N.T.S.



SIDE VIEW
N.T.S.

NOTE: CONCRETE BLOCKS MAY HAVE DIFFRENT DIMENSIONS AND SPECIFICATIONS. PLEASE HAVE THE BLOCKS APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

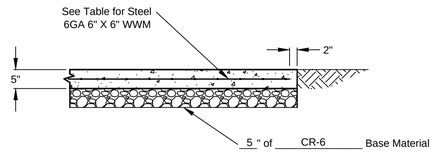
NRCS MARYLAND — PRECAST CONCRETE BLOCKS



12" CONCRETE CURB
CC-1.1.12
NTS

Notes:
1) 4000 psi concrete
2) Grade 60 steel
3) Maximum backfill to top of curb (1')
4) Minimum backfill to top of floor

NRCS — U.S. Department of Agriculture, Natural Resources Conservation Service, Maryland | Drawing: CC-1.1.12 | Issue:



CONCRETE FLOOR DETAIL
CF-5
NTS

Notes:
1) 4000 psi concrete
2) Grade 60 steel

NRCS — U.S. Department of Agriculture, Natural Resources Conservation Service, Maryland | Drawing: CF-5 | Issue:

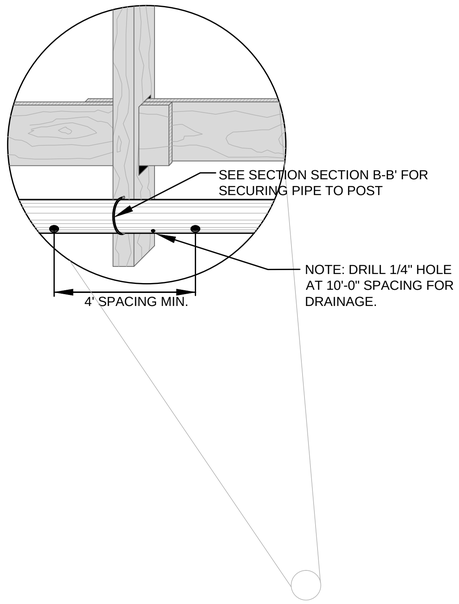
United States Department of Agriculture
Natural Resources Conservation Service

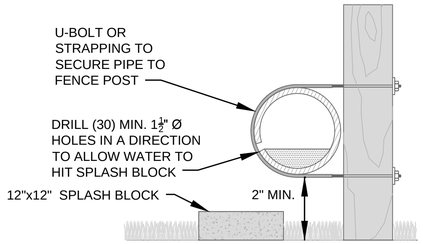
REVISIONS

Date	Description	Approved

File No.
*.DWG

Sheet 3 of 5





CROSS SECTION B-B'
NT

WASTEWATER TREATMENT DETAIL
SCALE : 1" = 20'

WASTEWATER TREATMENT STRIPS CONSTRUCTION SPECIFICATIONS

1. All materials and construction shall be in accordance with applicable NRCS standards and construction specifications.
2. All components of the completed system shall conform to the lines, grades, elevations, dimensions and materials shown on the plans.
3. Any changes in the plans or specifications must be approved by the original plan approver prior to being made. Changes are to be reviewed by the landowner for concurrence.
4. All disturbed areas shall be fertilized, seeded, and mulched or otherwise stabilized as required on the construction plans.
5. Precast Concrete units shall comply with ACI-523 and 533.
6. Joint Sealers shall conform to the requirements for ASTM-C920 or Federal Specification SS-S-210A; except that sealers for vertical or overhead application must meet the requirements of Federal Specification TT-S-227, Type II.
7. Waterstops. Vinyl-chloride polymer types shall be tested in accordance with Federal Test Method Standard No. 601, and shall show no sign of web failure due to brittleness at a temperature of -35 degrees Fahrenheit. Colloidal waterstops shall be at least 75 percent bentonite in accordance with Federal Specification SS-S-210A.
8. Plastic Pipe and Appurtenances shall meet the following requirements, unless otherwise set forth in Section 7:
9. Appurtenances such as fittings, coupling bands, collars, end section, etc. shall be composed of the same material as the pipe and conform to the appropriate ASTM standard and specification.

   D 1785 Poly (Vinyl Chloride) (PVC) Plastic Pipe Schedules 40, 80, 120

   D 2241 Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)

   D 2104 Polyethylene (PE) Plastic Pipe Schedule 40

   D 2239 Polyethylene (PE) Plastic Pipe, (SIDR-PR) Based on Controlled Inside Diameter

   D 2447 Polyethylene (PE) Plastic Pipe, Schedules 40 & 80, Based on Outside Diameter

   D 3035 Polyethylene (PE) Plastic Pipe, (SDR-PR) Based on Controlled Outside Diameter

   F 714 Polyethylene (PE) Plastic Pipe, (SDR-PR) Based on Outside Diameter

   D 1527 Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe Schedules 40 & 80

   D 2282 Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, (SDR-PR)
10. Only track mounted equipment shall be permitted on the filter area. All of the stockpiled topsoil shall be spread over the entire re-graded surface of the filter area. The topsoil shall be uniformly spread to the finished grades. The topsoil shall be dry enough that it does not adhere to the equipment tracks. Equipment traffic on the topsoil shall be kept to an absolute minimum.
11. Fill material shall be placed in maximum 8-inch lifts (before compaction). The lifts shall be compacted by the traversing of the entire surface by not less than one track of the equipment or by a minimum of four complete passes with a sheepsfoot, vibratory, or rubber tire roller. Compaction around structures shall be accomplished by placing fill in maximum 4-inch lifts and compacting by means of hand tampers or other manually directed compaction equipment. The technician shall determine if the moisture content is suitable for fill placement. The contractor shall make adjustments as directed by the technician. The method of compaction shall be approved prior to placement of fill material. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.
12. The Soil Conservation District makes no representation as to the existence or nonexistence of any utilities at the construction site. Shown on these construction drawings are those utilities, which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities. Miss Utility should be contacted at 1 800-257-7777.

CONCRETE CONSTRUCTION SPECIFICATIONS
Formed Concrete
Revised 4/14

1. All materials and construction shall be in accordance with applicable NRCS Practice Standards and ACI-318.
2. Any changes in the plans or specifications must be approved by the design approver prior to being made. Changes are to be reviewed by the landowner for concurrence.
3. Concrete shall have Type IA or IIA cement, 28-day compressive strength of 4,000 psi, 5% air entrainment and a slump of 3 to 5 inches. Air entrainment admixtures shall conform to ASTM C260.
4. Reinforcing steel shall conform to ASTM A615, Grade 60 steel. All reinforcing material shall be free of dirt, loose rust, scale, oil, paint or other coatings. The steel shall be accurately placed into position, as shown on the plans, and securely restrained and blocked into position prior to placement of concrete. Insertion of steel into fresh concrete is not permitted. Reinforcement steel shall have a minimum of 2 inches of concrete cover against all forms and 3 inches against soil, unless otherwise shown on the plans. Ring steel shall have a minimum overlap of 24 inches. All other reinforcement steel splices shall overlap a minimum of 18 inches. Welded wire mesh shall conform to ASTM A1064 and overlap a minimum of 6 inches. The welding of reinforcing steel is not permitted.
5. Waterstop will be used as shown on the plans and at all cold and construction joints. The type of waterstop will be approved by the field technician prior to use.
6. Plasticizing or plasticizing and retarding admixtures may be used and shall conform to ASTM C1017 or ASTM C494 Types F or G.
7. Concrete forms shall have sufficient strength and rigidity to hold the concrete to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete. The inside of the forms shall be oiled with a non-staining mineral oil or thoroughly wet before concrete is placed. Forms may be removed 24 hours after the placement of concrete.
8. Metal ties or anchorages shall be full dimension. Nominal size wall ties are not permitted. Wall tie ends must be broken off and patched with a concrete epoxy or polymer cement. Patching is required on both the inside and outside of concrete structures.
9. Concrete shall be delivered to the site and discharged completely into the forms within 90 minutes after the truck leaves the plant. This time shall be reduced to 45 minutes when the atmospheric temperature is over 90^0 F. The concrete shall be maintained at a temperature below 90^0 F during mixing, conveying and placement. Set retarding admixtures may be used to increase mixing time. Water reducing and/or retarding admixtures shall conform to ASTM C494 Types A, B, D, F or G.
10. All concrete for walls shall be consolidated with internal type mechanical vibrators or by rodding. Concrete shall be placed in horizontal lifts not greater than 2 feet. Concrete shall not have a vertical drop greater than 5 feet. An elephant trunk, chute, or similar means shall be used when applicable to minimize the vertical drop. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.
11. Concrete shall not be placed when the daily minimum atmospheric temperature is less than 40^0 F unless facilities are provided to prevent the concrete from freezing. The concrete shall be protected from freezing for a minimum of 7 days or the concrete shall be kept at a temperature of 55^0 F for a minimum of 3 days. Accelerating or water-reducing and accelerating admixtures shall be noncorrosive and conform to the requirements of ASTM C494, Types C and E. Cold weather concreting procedures shall conform to ACI-306.
12. Concrete shall be kept continuously moist for the curing period after the placement of the concrete. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may be used in lieu of the application of moisture. Curing compounds shall conform to ASTM C309, type 2.
13. Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with quickset, non-shrink hydraulic cement, concrete epoxy or polymer cement. Voids left by wall ties shall be patched with a concrete epoxy or polymer modified cement.
14. Concrete top surfaces shall be screeded, troweled and broom finished unless otherwise approved.
15. Walls may be backfilled 7 days after the placement of concrete, unless otherwise approved.
16. Fill material under concrete shall be accomplished by placing maximum 8-inch lifts (before compaction). The lifts shall be compacted by the traversing of the entire surface by not less than one track of the equipment or by a minimum of four complete passes with a sheepsfoot, vibratory, or rubber tire roller.

    Compaction around structures (i.e. around pipes, adjacent to walls, etc.) shall be accomplished by placing fill in maximum 4-inch lifts and compacting by means of hand tampers or other manually directed compaction equipment.

    The technician shall determine if the moisture content is suitable for fill placement. The contractor shall make adjustments as directed by the technician. The method of compaction shall be approved prior to placement of fill material.
17. The backfill behind walls shall conform to the grades shown on the plans. When placing uncompacted fill provide an additional foot of fill to allow for settlement.
18. Subsurface drainage must be provided as shown on the plans. Drain tubing must meet the requirements of ASTM F405 Heavy Duty.

STATE HIGHWAY ADMINISTRATION GEOTEXTILE REQUIREMENTS

Maryland Application Class	Type of Geotextile	Grab Strength Lb D 4632	Puncture Strength Lb D 4833	Permittivity Sec-1	Apparent Opening Size, Max Mm D 4751	Trapezoid Tear Strength Lb D4533
SD TYPE I	NONWOVEN	160	55	0.50	0.43	55
	WOVEN, MONOFILAMENT	250	90	0.50	0.43	90
SD TYPE II	NONWOVEN	160	55	0.20	0.25	55
	WOVEN, MONOFILAMENT	250	90	0.20	0.25	90
PE TYPE I	NONWOVEN	200	80	0.70	0.43	80
	WOVEN, MONOFILAMENT	250	90	0.70	0.43	90
PE TYPE I	NONWOVEN	200	80	0.20	0.25	80
	WOVEN, MONOFILAMENT	250	90	0.20	0.25	90
PE TYPE III	NONWOVEN	200	80	0.10	0.22	80
	WOVEN	250	90	0.10	0.22	90
SE	NONWOVEN	200	80	0.20	0.30	80
	WOVEN	250	90	0.20	0.30	90
ST	WOVEN	300*	110	0.05	0.15**	110
F	WOVEN	100	-	0.05	0.60	-
E	NONWOVEN	90	30	0.05	0.30	30

Note: 1 All property values are based on minimum average roll values in the weakest principle direction, except for apparent opening size.
Note: 2 The ultraviolet stability shall be 50 percent after 500 hours of exposure for all classes, except Class F, which shall be 70 percent (D 4355)
* Minimum 15 percent elongation.
** This is a minimum apparent opening size, not a maximum.

CONCRETE CONSTRUCTION SPECIFICATIONS
FLAT WORK ONLY
Revised 4\14

1. All materials and construction shall be in accordance with applicable NRCS Practice Standards and ACI-318.
2. Any changes in the plans or specifications must be approved by the design approver prior to being made. Changes are to be reviewed by the landowner for concurrence.
3. Concrete shall have Type IA or IIA cement, 28-day compressive strength of 4,000 psi, 5% air entrainment and a slump of 3 to 5 inches. Air entrainment admixtures shall conform to ASTM C260.
4. Reinforcing steel shall conform to ASTM A615, Grade 60 steel. All reinforcing material shall be free of dirt, loose rust, scale, oil, paint or other coatings. The steel shall be accurately placed into position, as shown on the plans, and securely restrained and blocked into position prior to placement of concrete. Insertion of steel into fresh concrete is not permitted. Reinforcement steel shall have a minimum of 2 inches of concrete cover against all forms and 3 inches against soil, unless otherwise shown on the plans. All other reinforcement steel splices shall overlap a minimum of 18 inches. Welded wire mesh shall conform to ASTM A1064 and overlap a minimum of 6 inches. The welding of reinforcing steel is not permitted.
5. Waterstop will be used as shown on the plans and at all cold and construction joints. The type of waterstop will be approved by the field technician prior to use.
6. Plasticizing or plasticizing and retarding admixtures may be used and shall conform to ASTM C1017 or ASTM C494 Types F or G.
7. Concrete shall be delivered to the site and discharged completely into the forms within 90 minutes after the truck leaves the plant. This time shall be reduced to 45 minutes when the atmospheric temperature is over 90^0 F. The concrete shall be maintained at a temperature below 90^0 F during mixing, conveying and placement. Set retarding admixtures may be used to increase mixing time. Water reducing and/or retarding admixtures shall conform to ASTM C494 Types A, B, D, F or G.
8. Concrete shall not be placed when the daily minimum atmospheric temperature is less than 40^0 F unless facilities are provided to prevent the concrete from freezing. The concrete shall be protected from freezing for a minimum of 7 days or the concrete shall be kept at a temperature of 55^0 F for a minimum of 3 days. Accelerating or water-reducing and accelerating admixtures shall be noncorrosive and conform to the requirements of ASTM C494, Types C and E. Cold weather concreting procedures shall conform to ACI-306.
9. Concrete shall be kept continuously moist for the curing period after the placement of the concrete. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may be used in lieu of the application of moisture. Curing compounds shall conform to ASTM C309, type 2.
10. Concrete surfaces shall be screeded, floated, troweled and broom finished unless otherwise approved.
11. Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with quickset, non-shrink hydraulic cement.

LANDOWNER TRACT				PRACTICE(S)		
TOTAL AREA	**AREA 1**		**AREA 2**		**AREA 3**	
MATERIALS/RATE	**AMOUNT PLANNED**	**AMOUNT APPLIED**	**AMOUNT PLANNED**	**AMOUNT APPLIED**	**AMOUNT PLANNED**	**AMOUNT APPLIED**
FERTILIZER ***10-20-20*** **500LBS/AC**						
LIME - **2TONS/AC** *DOLOMITIC*						
SEED MIXTURE (SEE BELOW)						
MULCH **2 TONS/AC**						

ENTER KINDS AND AMOUNT OF SEED BELOW **NOTE: INOCULATE ALL LEGUMES**

AREA 1 NRCS SEED MIX #	**AREA 2 NRCS SEED MIX #**	**AREA 3 NRCS SEED MIX #**

SITE PREPARATION AND OTHER PERTINENT INFORMATION:
DISK ALL DISTURBED AREAS TO A DEPTH OF 4-6"
CULTIPACK AFTER SEEDING

SEEDING DATES
SPRING:
FALL:

PLAN APPROVED BY:		CHECKED FOR TECHNICAL COMPLANCE BY:	
TITLE	DATE	TITLE	DATE

USDA UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE MARYLAND

SEEDING

DRAWING NO. S-1.0
ISSUE DATE: 7/2014

Designed MM/YY
Drawn
Checked

LANDOWNER
313 WASTE STORAGE FACILITY
TRACT
City, Maryland

Approved Date
Title Job Class

Maryland Department of Agriculture
DISTRICT Soil Conservation District

United States Department of Agriculture
USDA
Natural Resources Conservation Service

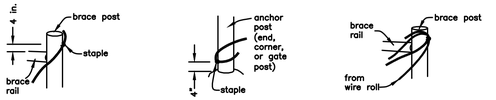
REVISIONS

Date	Description	Approved

File No.
*.DWG

MARYLAND STANDARDS FOR AGRICULTURAL BMPS
DETAIL 382-E - FENCE

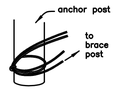
WIRE FENCE BRACE DETAILS



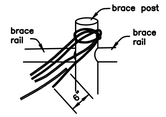
1. Drive staple about half its length into brace post about 4 inches above brace rail, on opposite side from brace.

2. Drive staple in a similar manner on anchor post about 4 inches above ground, on opposite side from brace.

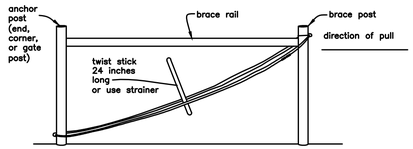
3. Unroll enough brace wire for two complete loops around anchor and brace posts. Thread brace wire through staples.

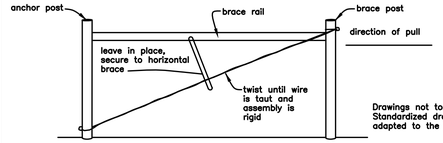


4. Wrap wire around anchor post and return toward brace post.



5. Cut brace wire from roll, allowing enough wire to wrap around brace post and extend 6 to 12 inches past the other wire end. Splice wires together.





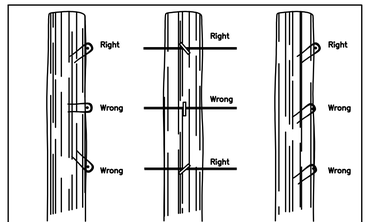
Drawings not to scale. Standardized drawings must be adapted to the specific site.

DATE ISSUED: June, 2003 SHEET OF

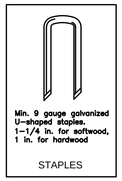
U.S.DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	382-E-FENCE.DWG	MARYLAND DEPARTMENT OF AGRICULTURE MARYLAND SOIL CONSERVATION DISTRICTS

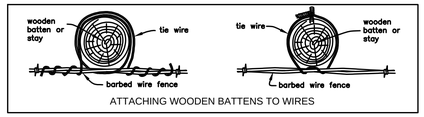
MARYLAND STANDARDS FOR AGRICULTURAL BMPS
DETAIL 382-F - FENCE

FENCE STAPLES AND WIRE ATTACHMENT

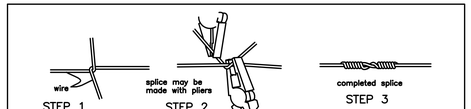


ATTACHING WIRES TO POSTS





ATTACHING WOODEN BATTENS TO WIRES



"WESTERN UNION" FENCE WIRE SPLICE

Drawings not to scale. Standardized drawing must be adapted to the specific site.

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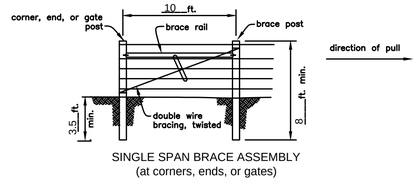
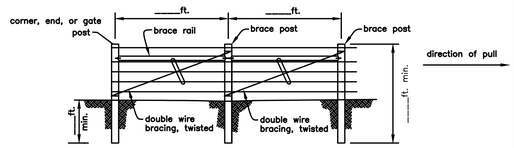
MARYLAND STANDARDS FOR AGRICULTURAL BMPS
DETAIL 382-D3 - FENCE

HIGH TENSILE SMOOTH WIRE FENCE BRACES



SINGLE SPAN BRACE ASSEMBLY
(at corners, ends, or gates)



DOUBLE SPAN BRACE ASSEMBLY
(at corners, ends, or gates)

All corner, end, and gate posts: min. 6 in. diam. or 6 in. square.

All brace posts: min. 5 in. diam. or 5 in. square.

Brace rails (steel): min. 2 in. diam. Brace rails (wooden): min. 3½ in. diam. or 4 in. square.

SPECIES AND TREATMENT FOR ALL WOOD: Use untreated durable posts of species such as red cedar, black locust or osage-orange with bark removed, or non-durable wood that is preservative pressure treated (0.40 lbs./cubic foot CCA, or equivalent non-CCA treatment). Do not use red pine.

SPECIAL INSTRUCTIONS

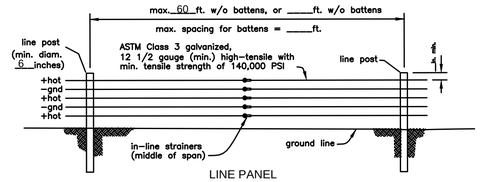
Drawing not to scale. Standardized drawing must be adapted to the specific site.

DATE ISSUED: July, 2003 SHEET OF

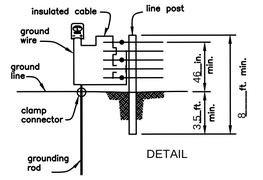
U.S.DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	382-D3-FENCE.DWG	MARYLAND DEPARTMENT OF AGRICULTURE MARYLAND SOIL CONSERVATION DISTRICTS

MARYLAND STANDARDS FOR AGRICULTURAL BMPS
DETAIL 382-D2 - FENCE

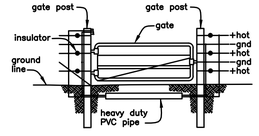
HIGH TENSILE SMOOTH WIRE FENCE - ELECTRIC



LINE PANEL



DETAIL



GATE DETAIL

Follow all manufacturer's instructions when installing the fence charger (energizer) and grounding the fence.

Number of wires needed: 5 Spacing at 10, 18, 26, 36, 46 inches above the ground.

Line posts (wooden): min. 4 in. diam. or 4 in. square.

Line posts (steel): studded or punched T, U, or Y shaped, with anchor plates.
Min. weight 1.3 lbs./ft. (excluding anchor plate).

SPECIES AND TREATMENT FOR ALL WOOD: Use untreated durable posts of species such as red cedar, black locust or osage-orange with bark removed, or non-durable wood that is preservative pressure treated (0.40 lbs./cubic foot CCA, or equivalent non-CCA treatment). Do not use red pine.

SPECIAL INSTRUCTIONS

Drawing not to scale. Standardized drawing must be adapted to the specific site.

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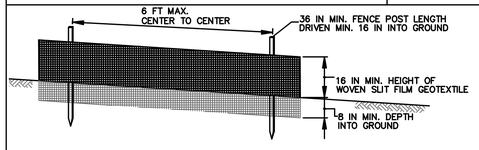
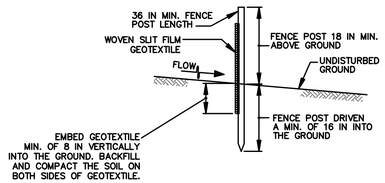
U.S.DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	382-D2-FENCE.DWG	MARYLAND DEPARTMENT OF AGRICULTURE MARYLAND SOIL CONSERVATION DISTRICTS

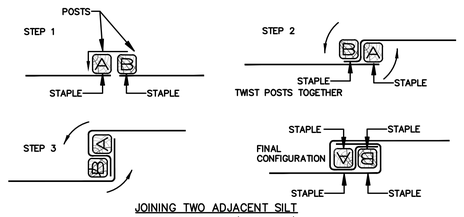
DETAIL E-1 SILT FENCE — STANDARD SYMBOL: SF



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE — STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

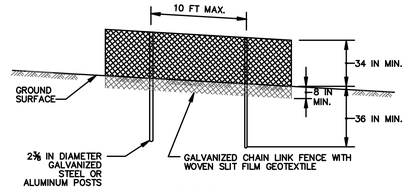
1. USE WOOD POSTS 1¾ X 1¾ ± 1/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

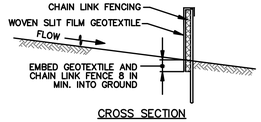
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE — STANDARD SYMBOL: SSF



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

Open Air Manure Storage Safety Tips

Injuries and fatalities occur in confined space manure storages that are enclosed, such as beneath animal quarters, or below-ground reception and pump out pads, and in non-enclosed storages, such as earthen, lined and concrete manure pits and ponds. Non-enclosed manure storages are open to the atmosphere but still meet the definition of a confined space in terms of occupational safety and health.

In the case of open air manure storage pits and ponds, some hazards can include:

- A thick liquid and floating crust that make swimming, buoyancy or even moving around very difficult.
- Steep and slippery slopes that can make getting out of manure storages difficult or impossible.
- Localized layers of hazardous gases existing above manure surfaces, especially on hot, humid days with little to no breeze.
- A speeding up of manure gas release from movement, agitation, removal or additional of manure to a storage pond.
- Not having sufficient oxygen to breath if a person is 'treading" in manure because of an inability to get out.
- Not being able to see into depths of manure like you can with water.
- A slow response time for adequate emergency actions because of site isolation and remoteness.

Safety guidelines to follow:

1. Make sure everyone that needs to be near manure storage structures understand the hazards that exist, including the effects that the various gases has on them.
2. Make sure the open air manure storage has a fence installed around the perimeter and access gates are locked to keep unauthorized personnel from entering the area.
3. The open air storage should have manure drowning hazard signs and no trespassing signs on all sides of the storage.
4. If you must go into the fenced area of the open manure storage, consider wearing a safety harness with life line attached to a safely located solid object or anchor.
5. Never work alone. The second person's role is to summon help in an emergency and assist with rescue without entering the storage.
6. Rescue equipment, such as a flotation devices and lifelines, should be attached to every manure pump.
7. Move slowly around manure storages as the ground can sometimes be uneven and may cause a person to trip or stumble.
8. Bystanders and non essential workers should stay away from pump out or other accessible areas.
9. There should be no horseplay near the open manure pit or pumping equipment.
10. If equipment malfunctions during agitating or pumping of the manure, shut all equipment of and remove it from the storage before servicing or repairing.
11. If you feel unsure or uncomfortable with what you are getting ready to do near the open manure pit, step back, contact someone and review the situation before proceeding.
12. Toxic gas, and oxygen deficiency gas monitors can be used to determine if unsafe conditions exist.
13. Be prepared t call 911 if an emergency happens. Being prepared means accurately describing the incident, number of victims, and giving specific directions to the site of the emergency.

Designed MM/YY
Drawn
Checked

LANDOWNER
313 WASTE STORAGE FACILITY
TRACT
City, Maryland

Date
Job Class
Approved
Title

Maryland Department of Agriculture
DISTRICT Soil Conservation District

United States Department of Agriculture
Natural Resources Conservation Service

REVISIONS

Date	Description	Approved

File No.
*.DWG

Sheet 5 of 5